REMARKS

Independent claim 7; claims 2-6 depended from claim 7, and independent claim 8 and claims 9-12 depended from claim 8 remain in this application for examination.

In the Specification:

While Applicants appreciate the Examiner's suggesting that the third arrangement of the specification with subtitles be adapted, Applicants have that found for some inventions, sub-titles can be used by entities challenging a patent to foster unintended limitations on claims. Accordingly, Applicant's prefer in this application not to use sub-titles.

The specification has been amended as suggested by the Examiner to use conventional drawing figure designations. The drawings have also been amended to use the figure designations as shown in red in the attached copies of the drawings.

Rejections Under 35 U.S.C. §102:

Claim 1 has been rejected under 35 U.S.C. §102(b) as being anticipated by the TDB '862 publication. Applicant respectfully traverses this rejection and directs the Examiner's attention to independent claim 7 which has replaced dependent claim 1.

Claim 7 is directed to a miniaturized apparatus for delivering sampling volumes in the range of 0.1µl to 100µl to a miniaturized analytical system. The apparatus TDB '862 disclosers no such system, but is rather directed to a fluidic logic element used in a logic block. In TDB '862 there are no fluid connections disclosed which may be closed, rather in TDB '862 only inlet and outlet ports 10 and 12 are disclosed. Accordingly, TDB'862 does not disclose each limitation of claim 7 and therefore can not be anticipated by claim 7. Accordingly, this rejection if applied to new claim 7 would not be applicable.

Clearly, Applicants' apparatus comprises more than a single channel with an inlet and outlet but is rather part of a miniaturized analytical system which includes further channels for sample separation or analysis. Accordingly, TDB '862 does not disclose the structure claimed by Applicant in claim 7 or any of the claims depended therefrom.

Claims 1-6 are rejected as anticipated by the Elwenspoek et al. publication. Applicants respectfully traverse this rejection.

According to the Abstract of Elwenspoek et al, Elwenspoek discloses components for an integrated micro liquid handling system which includes among its components a dosage system. The dosage system of Elwenspoek et at. Includes a flow sensor and an pump (see line 6 of the Abstract.) Clearly, Elwenspoek et al, teaches away form Applicants' claimed invention as set forth in claims 1-6 because the dosage system is a very complicated and expensive system, not suitable for disposable miniaturized analytical systems. This is evident in Elewenspoek et al because the flow sensor and pump are micro machined on a siliconed wafer. In Applicant's present invention there is no flow sensor, but rather comprises a channel section with fluid connections.

In support of the rejection, the Examiner cites page 233 and Fig. 13. Page 233 concerns simulations of nozzle diameter, injection flow rate and channel height used to improve a design of a micromixer. There is nothing on page 233 directed to a miniaturized analytical system or even to the dosage system set forth in the abstract of Elewenspoek et al.

With respect to Fig. 13, Fig. 13 shows an experimental set up for using a micromixer, which in Fig. 13 is the black disk at the center of Fig. 13. No other components are part of the micromixer, but are rather external components for a liquid supply arrangement and for detection for various conditions within the system. The only miniaturized component within the system of Fig. 13 is the micromixer. All other components are usual macroscopic elements, e.g., a microscope, a video camera, an

argon laser, a compressor and a syringe pump with a motor controller, as well as other elements.

It is the Examiner's position that liquid supply systems comprising pumps and valves anticipates the present invention, but this is clearly not the case because the liquid supply system shown in Fig. 13 is a macroscopic system which is not integrated into a miniaturized analytical system. Moreover, in the arrangement shown in Fig. 13 is not a planar miniaturization analytical system, as required by Applicant's claims, in that it is not a chip.

Rejections Under 35 U.S.C. §103:

Claims 5 and6 have been rejected under 35 U.S.C. §1-03 as being unpatentable over Ewenspoeck et al. in view of Parce et al '231, Applicants respectfully traverse this rejection.

With respect to the obviousness issue, Applicant's invention is directed to having a miniturization analytical system with an integrated apparatus for sample delivery comprising a channel section with fluidic connections at both ends. The purpose of Applicant's invention is not to use microvalves or other miniaturized elements, but rather to provide a system which is substantially different from the system set forth in Fig. 13. Fig. 13 shows no sample delivery apparatus at all, not even a macroscopic sample delivery apparatus. The fluid supply system of Fig. 13 has a single on/off valve, syringe pumps and one three-way valve. These are not elements suitable for filling any section of a system such as Applicant's system with a sample, thereby defining the volume of a sample by the volume of the "channel section." In Elewenspoek et al., dosage of liquids is accomplished using a coveniental microscopical valve and syringe pumps. Only in the light of Applicant's teaching would one combine microvalves and other miniaturized elements of Parse et al. '231 with Elewenspoek et at.

Since Parce '231 is not directed to dispensing defined samples to miniaturized analytical systems, the deficiencies of Elwenspoek et al. are not addressed by the combination. Accordingly, any rejection based on the combination of these two references is not tenable.

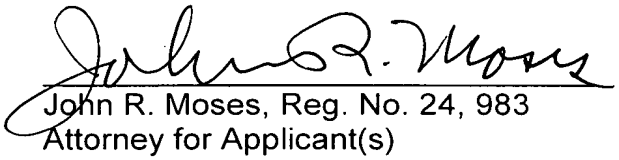
Applicant's new independent claim 7 as well as Applicant's new independent claim 8 include the limitation of having a fluid connections which allows excess fluid to exit the channel sections so the channel section contains only the calibrated amount of fluid which will be used in the miniaturized analytical system. Accordingly, claim 7 distinguishes for this further reason and claim 8 also distinguishes over this combination over references.

Claim 8 is directed to a miniaturized apparatus which utilizes a chip having the channel system therein wherein the channel system includes one "calibrated channel section of a volume in a range of 0.01 μ to 100 μl which defines a sample fluid volume. Claim 8 like claim 7 also recites fluidic micro connections which are in close proximity with the chip and are connected in sealing relationship to the first and second ends of the calibrated channel section. Applicants are concerned with very small samples of fluid. Consequently, the connections must be sealed so the they do not leak until opened. The stop cox in other elements used by Elewenspoek et al are not disclosed as being tightly sealed and can leak as much volume as retained in the calibrated panel sections recited in claims 8-12 as well as independent claim 7 and claims 2-6 depended from claim 7.

In that this is a full and complete response to the Office Action dated June 23, 2003, this application is now in condition for allowance and such allowance is hereby respectfully requeseted. If there are any remaining issues which could be expedited by a telephone conference, the Examiner is courteously invited to telephone counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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